



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,615	03/18/2004	Hibiki Itoh	G110-040 CON	5877
21706	7590	09/01/2006	EXAMINER	
NOTARO AND MICHALOS 100 DUTCH HILL ROAD SUITE 110 ORANGEBURG, NY 10962-2100			WILLIAMS, SHERMANDA L	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 09/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

TH

**Office Action Summary**

Application No.

10/803,615

Applicant(s)

ITO, HIBIKI

Examiner

Shermanda L. Williams

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached, detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

Amendment After Non-Final filed 5/16/2006 is acknowledged. Claim 13 has been canceled and Claim 14 has been added.

### ***Oath/Declaration***

1. Applicant's arguments, filed 5/16/2006, with respect to the Oath/Declaration have been fully considered and are persuasive. The objection to the Oath/Declaration has been withdrawn.

### ***Double Patenting***

In light of the terminal disclaimer filed 5/16/2006, the non-statutory double patenting rejection of claims 1-12 is withdrawn.

### **Claim Rejections - 35 USC § 102(b)**

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 11-12, 14 are rejected under 35 USC 102(b) as being unpatentable over Poeppel et al. (US 4,476,196). Poeppel et al. discloses a solid oxide side fuel cell having monolithic cross flow core and manifold comprising the following:

an insulated core with thin layers of an electrolyte and intermediate film (or separator) material sandwiched between layers of porous anode and cathode

electrodes respectively; See Claim 1, Column 4 Lines 52-61, Column 6 Line 20 to Column 7 Line 6, Column 8 Line 8 to Column 9 Line 5; The separator material in the current application (second sentence of paragraph 43) is disclosed as a strontium doped lanthanum chromite based oxide such as lanthanum chromite. The intermediate film material in the reference is lanthanum chromite (See Column 3 Line 17).

a core that has passageways for gas flow paths that are laid out in a crosswise or orthogonal pattern and has transverse manifolds for delivery and removal of reactant material;

with conductive web walls or conductive spacers between the individual cells and in the parallel and perpendicular direction respectively depending if it is an anode or cathode web wall See Column 7 Line 45 to Column 8 Line 7;

an electrolyte and separator material formed via the tape cast method (wetted process) for adhering to the anode and cathode electrode See Column 8 Line 8-17;

a ceramic paste is used to pack annular space to seal the structure and prevent gas leakage See Column 6 Lines 52-56;

Conductors or conductive jointing material that link the individual fuel cells See Column 7 Line 30;

a thin layer of electrolyte material **44** can be folded down on to the side or end portions **64** of the anode and cathode as seen in Figure 3, See Column 8 Line 64.

The reference teaches the use of anode, cathode, electrolyte, and separator materials that are matched as closely as possible to one another with respect to each coefficient of thermal expansion. See Column 9 Lines 25-40.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Poeppel et al. (US 4,476, 196) in view of Ketcham et al. (US. 6,045,935).

Poeppel et al. discloses a solid oxide fuel cell having monolithic cross flow core and manifolding. Poeppel et al. discloses all the limitations of claim 9 as discussed above except that the manifold structures or plates attached to the side surfaces of the laminated body are formed of a glass-ceramic (a type of ceramic). However, Ketcham et al. teaches that glass-ceramic is used for manifold in solid oxide fuel cells because the glass-ceramic closely matches the expansion properties of the electrolyte (see col. 3, line 65 to col. 4, line 14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use glass-ceramic as the material of construction for the manifolds taught by Poeppel et al. because glass ceramic closely matches the expansion properties of the electrolyte in the solid oxide fuel cell stack. This will alleviate the loss of contact

between the manifold and the surface of the laminate body thereby maintaining a proper seal.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Poeppel et al. (US 4,476, 196) in view of Ketcham et al. (US. 6,045,935) in combination with Moran Advanced Ceramics Datasheet for Glass Ceramic. The Morgan Advanced Ceramics Datasheet for Glass Ceramic states that one of the main advantages of glass ceramic is that it can be machined quickly and economically into complex shapes and precision parts using ordinary metal working tools. See [www.morganadvancedceramics.com/materias/gc.htm](http://www.morganadvancedceramics.com/materias/gc.htm) The free-cutting property of the glass-ceramic is an inherent property. See MPEP 2112. The claiming of an inherent property is not patentable. See *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir.1995) and *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983).

### ***Response to Arguments***

3. Applicant's arguments filed 5/16/2006 have been fully considered but they are not persuasive. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. The Applicant's argument that the current application "porosity" is different from the "porosity" of the prior art is not supported. The applicant has not shown unexpected results or any other evidence to support this reasoning for patentability. In regards to the argument that the flow paths of the current application

differ in number and size from the flow paths of the prior art, a change in size is generally recognized as being within the level of ordinary skill in the art. Also, the duplication or reduction of parts is considered within the level of ordinary skill in the art.

4. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections. The cited reduction of production steps as grounds for overcoming the prior art considers the process by which a product is made. It has been held that the method of forming a device is not germane to the issue of patentability of the device itself. The product of the current application and that of the prior art appear to be the same. The Applicant has not provided any evidence to support otherwise.

#### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shermanda L. Williams whose telephone number is (272) 571-8915. The examiner can normally be reached on Mon.-Thurs. 7 AM - 4:30 PM and alternating Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (272) 571-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

\*\*\*



PATRICK JOSEPH RYAN  
SUPERVISORY PATENT EXAMINER